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Appl. No. 10/526,342
AMENDMENT dated February 16, 2008
Reply to Office Action dated November 16, 2007

Attorney Docket No.: DN 99-009

In the Claims:

This listing of claims replaces all pervious versions and listings of the claims.

1. (Currently Amended) A process for producing precipitated calcium carbonate, comprising the steps of:

- (a) providing calcium hydroxide having at least ~~about~~ 92 weight percent solids; and
- (b) carbonating the calcium hydroxide with carbon dioxide gas and simultaneously comminuting for a time sufficient to produce a calcium carbonate having at least about a 90 weight percent conversion to calcium carbonate and having a solids concentration of at least ~~about~~ 92 weight percent; and
- (c) limiting addition of water to a mixture containing the calcium hydroxide and calcium carbonate during the carbonating step, so that the mixture containing the calcium hydroxide, calcium carbonate and water contains at least 92 weight percent solids throughout the carbonating step.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) The process for producing precipitated calcium carbonate according to claim 1, wherein the calcium hydroxide provided in step (a) is produced by the steps comprising:

- i) mixing calcium oxide and water in amounts sufficient to react to form calcium hydroxide substantially free of water; and
- ii) maintaining the mixture at an elevated temperature for a time sufficient to hydrate the calcium oxide to form calcium hydroxide having at least ~~about~~ 92 weight percent solids.

5. (Original) The process according to claim 4, wherein the step of maintaining the mixture at an elevated temperature is performed at a temperature of up to about 600 degrees Fahrenheit for a time

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sufficient to hydrate the calcium oxide to form calcium hydroxide having at least about a 95 weight percent conversion to calcium hydroxide.

6. (Original) The process according to claim 5, wherein the step of maintaining the mixture at an elevated temperature is performed for a time sufficient to hydrate the calcium oxide to form calcium hydroxide having at least about a 98 weight percent conversion to calcium hydroxide.

7. (Previously Presented) The process according to claim 1, wherein the steps of carbonating and simultaneously comminuting are performed until at least a 95 weight percent conversion to calcium carbonate is achieved.

8. (Previously Presented) The process according to claim 1, wherein the steps of carbonating and simultaneously comminuting are performed until at least a 97 weight percent conversion to calcium carbonate is achieved.

9. (Currently Amended) A process for producing precipitated calcium carbonate, comprising the steps of:

- (a) providing calcium hydroxide having at least ~~about~~ 92 weight percent solids;
- (b) carbonating the calcium hydroxide with carbon dioxide gas for a time sufficient to at least partially convert the calcium hydroxide to calcium carbonate;
- (c) comminuting the at least partially converted calcium hydroxide; and
- (d) repeating alternating steps of carbonating and comminuting for a time sufficient to substantially convert the calcium hydroxide to calcium carbonate having at least ~~about~~ a 90 weight percent conversion to calcium carbonate and having a solids concentration of at least ~~about~~ 92 weight percent; and

(e) limiting addition of water to a mixture containing the calcium hydroxide and calcium carbonate during the carbonating and comminuting steps, so that the mixture containing the calcium hydroxide, calcium carbonate and water contains at least 92 weight percent solids throughout the carbonating and comminuting steps.

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10. (Canceled)

11. (Canceled)

12. (Currently Amended) The process for producing precipitated calcium carbonate according to claim 9, wherein the calcium hydroxide provided in step (a) is produced by the steps comprising:

- i) mixing calcium oxide and water in amounts sufficient to react to form calcium hydroxide substantially free of water; and
- ii) maintaining the mixture at an elevated temperature for a time sufficient to hydrate the calcium oxide to form calcium hydroxide having at least ~~about~~ 92 weight percent solids.

13. (Original) The process according to claim 12, wherein the step of maintaining the mixture at an elevated temperature is performed at a temperature of up to about 600 degrees Fahrenheit for a time sufficient to hydrate the calcium oxide to form calcium hydroxide having at least about a 95 weight percent conversion to calcium hydroxide.

14. (Original) The process according to claim 13, wherein the step of maintaining the mixture at an elevated temperature is performed for a time sufficient to hydrate the calcium oxide to form calcium hydroxide having at least about a 98 weight percent conversion to calcium hydroxide.

15. (Original) The process according to claim 9, wherein the steps of carbonating and comminuting are performed until at least a 95 weight percent conversion to calcium carbonate is achieved.

16. (Original) The process according to claim 15, wherein the steps of carbonating and comminuting are performed until at least a 97 weight percent conversion to calcium carbonate is achieved.

17. (Canceled)

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18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (New) The method of claim 1, wherein step (c) includes limiting addition of water to a mixture containing the calcium hydroxide and calcium carbonate during the carbonating step, so that the mixture containing the calcium hydroxide, calcium carbonate and water is maintained within a range of 92 to 97 weight percent solids throughout the carbonating step.

22. (New) The method of claim 9, wherein step (d) includes limiting addition of water to a mixture containing the calcium hydroxide and calcium carbonate during the carbonating and comminuting steps, so that the mixture containing the calcium hydroxide, calcium carbonate and water is maintained within a range of 92 to 97 weight percent solids throughout the carbonating and comminuting steps.